

## Chapter 8

### *Aggression*

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*The human failing I would most like to correct is aggression. It may have had survival advantage in caveman days, to get more food, territory or a partner with whom to reproduce, but now it threatens to destroy us all.*

—Stephen Hawking (cited in Clark, 2015)

In the world today, aggression and violence seem far too normal and common place. Globally, almost half a million people are murdered each year, and millions more suffer violence-related injuries (World Health Organization, 2017). Violence has been compared to a contagious disease that spreads from person to person (Patel, Simon, & Taylor, 2013).

American actor and director Edward James Olmos noted, “Education is the vaccine for violence.” In this chapter, I will attempt to educate readers about aggression and violence and how to reduce it. First, I define the terms *aggression* and *violence*. Second, I describe different theoretical explanations for aggression. Third, I describe several individual risk factors for aggression and violence. Fourth, I describe several contextual risk factors for aggression and violence. Fifth, I describe internal states related to aggression. Sixth, I discuss biases related to hostile appraisals. Finally, I discuss different approaches for reducing aggression and violence.

### **Aggression and Violence Defined**

In sports and in business, the term *aggressive* is frequently used when the terms *assertive*, *enthusiastic*, or *confident* would be more accurate. For example, an aggressive salesperson is one who tries really hard to sell you something. However, the salesperson is not trying to harm you. In social psychology, the term *aggression* is generally defined as any behavior that is intended to harm another person who does not want to be harmed (e.g., Baron & Richardson, 1994). This definition contains four important features. First,

aggression is an external behavior that you can see. For example, you can see a person hit someone, curse someone, or try to destroy someone's reputation by spreading gossip. (These behaviors represent different forms of aggression, which I discuss in the next section.) Aggression is not an emotion that occurs inside a person, such as an angry feeling. Aggression is not a thought that occurs inside someone's brain, such as mentally rehearsing a murder one would like to commit. Second, aggression is a social behavior because it involves at least two people. Third, aggression is intentional, not accidental. However, not all intentional behaviors that hurt others are aggressive behaviors. For example, a dentist might intentionally give a patient a shot of Novocain (and the shot hurts!), but the goal is to help rather than hurt the patient. Fourth, the victim wants to avoid the harm. Thus, again, the dental patient is excluded, because he or she is not seeking to avoid the harm (in fact, the patient probably booked the appointment weeks in advance and paid to have it done!). Suicide would also be excluded, because the person who commits suicide does not want to avoid the harm. Sado-masochism would likewise be excluded, because the masochist enjoys being harmed by the sadist.

Social psychologists and laypeople also differ in their use of the term *violence*. A meteorologist might call a storm "violent" if it has intense winds, rain, thunder, and lightning. In social psychology, *violence* is aggression that has extreme physical harm, such as injury or death, as its goal (Bushman & Huesmann, 2010). For example, intentionally hitting, kicking, shooting, or stabbing another person is an act of violence. Violence is a subset of aggression. All violent acts are aggressive, but not all aggressive acts are violent. The US Federal Bureau of Investigation (FBI) classifies four crimes as violent: murder, assault, rape, and robbery. Social psychologists would also classify other physically aggressive acts as violent even if they do not meet the FBI definition of a violent crime, such as getting in a fist fight with someone. But a husband who screams and swears at his wife would not be committing an act of violence by this definition.

## Forms and Functions of Aggression

### *Different Forms of Aggression: Physical/Verbal, Direct/Indirect, Passive/Active, Relational, and Displaced Aggression*

It is useful to distinguish between forms and functions of aggression. By *forms*, I mean how the aggressive behavior is expressed. Some common forms of aggression are physical versus verbal, direct versus indirect, and active versus passive (Buss, 1961). *Physical aggression* involves harming others with body parts or weapons (e.g., hitting, kicking, stabbing, or shooting). *Verbal aggression* involves harming others with words (e.g., yelling, screaming, swearing, name-calling).

The different forms of aggression can be expressed directly or indirectly. With *direct aggression*, the victim is physically present. With *indirect aggression*, the victim is physically absent. For example, physical aggression can be direct (e.g., choking a person) or indirect (e.g., puncturing the tires of a person's car when he or she isn't looking). Similarly, verbal aggression can be direct (e.g., cursing a person face to face) or indirect (e.g., spreading rumors about a person who is not present).

The form of aggression may be active or passive. With *active aggression*, the aggressor responds in a harmful manner (e.g., hitting, cursing). With *passive aggression*, the aggressor fails to respond in a helpful manner. For example, the aggressor might "forget" to deliver an important message to the person. It is more difficult to establish blame with passive aggression than with active aggression, which is a desirable feature from the aggressor's perspective.

Direct and active forms of aggression can be quite risky, leading to injury or even death. Thus, most people would rather use indirect and passive forms of aggression.

Other scholars have proposed other forms of aggression, namely, relational aggression and displaced aggression. *Relational aggression* (also called *social aggression*) is defined as intentionally harming another person's social relationships, feelings of acceptance by others, or inclusion within a group (e.g., Crick & Grotpeter, 1995). Some examples of relational aggression include saying bad things about people behind their backs, withdrawing affection to get what you want, excluding others from your circle of friends, and giving someone the "silent treatment." Relational aggression is similar to the concept of ostracism. *Ostracism* refers to being excluded, rejected, and ignored by others (Williams, 2001). Note that the different forms of aggression can overlap. For example, spreading rumors about a person behind his or her back is an example of relational aggression as well as indirect verbal aggression.

Sometimes aggression is *displaced* against an innocent, substitute aggression (e.g., Marcus-Newhall, Pedersen, Carlson, & Miller, 2000). The substitute target has not done anything to provoke an aggressive response but just happens to be in the wrong place at the wrong time. For example, a man is berated by his boss at work and "suffers in silence" rather than retaliating against his boss. When he gets home, however, the man yells at his kids instead. Sometimes the substitute target is not entirely innocent but has committed a minor or trivial offense—called *triggered displaced aggression* (Pedersen, Gonzales, & Miller, 2000). For example, perhaps the man's kids left toys in the family room rather than putting them away like he asked them to. People displace aggression for two main reasons. First, directly aggressing against the initial provoker may not be possible because the source is unavailable (e.g., the provoker has left the area) or because the source is an intangible entity (e.g., hot temperature). Second, fear of retaliation or punishment from the provoker may inhibit direct aggression. For example, the employee who was reprimanded by his boss may be reluctant to retaliate because he does not want to lose his job.

### *Different Functions of Aggression: Reactive and Proactive Aggression*

Aggressive acts may also differ in their function. Consider two hypothetical examples. In the first example, a husband finds his wife and her secret lover together in bed. He takes his rifle from the closet and shoots and kills them both. In the second example, a "hitman" uses a rifle to kill someone for money. The form of aggression is the same in both examples—physical aggression (violence) caused by shooting and killing victims with a rifle. However, the motives appear quite different. In the first example, the husband appears to be motivated by anger. He is enraged when he finds his wife making love to another man, so he shoots them both. In the second example, the "hitman" appears to be motivated by money. The "hitman" probably does not hate his victim and probably is not angry with him. He might not even know his victim, but he kills the person anyway because he wants the money. To capture different functions or motives for aggression, researchers have distinguished between reactive aggression (also called hostile, affective, angry, impulsive, or retaliatory aggression) and proactive aggression (also called instrumental aggression; e.g., Buss, 1961; Dodge & Coie, 1987; Feshbach, 1964). *Reactive aggression* is "hot," impulsive, angry behavior that is motivated by a desire to harm someone. Harming the person is the end goal. *Proactive aggression* is "cold," premeditated, calculated behavior that is motivated by some other goal (obtaining money, restoring one's image, restoring justice). Harming the other person is a means to some other end goal. Some researchers have argued that it is difficult to distinguish between reactive and proactive aggression because they are highly correlated and because motives are often mixed (Bushman & Anderson, 2001). For example, what if the husband who finds his wife making love to another man hires a hitman to kill them both? Would this be reactive or proactive aggression?



## Theoretical Approaches to the Study of Aggression

As Stephen Hawking noted at the beginning of this chapter, although aggression was adaptive for our ancient ancestors, it seems maladaptive today. Aggression breeds more aggression, and “violence begets violence” as noted by Martin Luther King Jr. This can create a destructive “downward spiral” (Slater, Henry, Swaim, & Anderson, 2003). We might therefore ask: Why do humans behave aggressively? Is it because our brains are old and the aggressive tendencies that were so useful for our ancient ancestors are difficult to override now? Is it because of biological abnormalities or poor upbringing? Is it because of frustration? In this section, we review the major psychological theories that have been proposed to understand human aggression.

### Instinctive/Psychoanalytic Theories

First given scientific prominence by Darwin (1871), the instinct theory of aggression viewed aggressive behavior as motivated neither by the seeking of pleasure nor the avoidance of pain, but rather as an evolutionary adaptation that had enabled our ancient ancestors to survive better. According to this view, aggression is instinctive in humans just as it is in many other animals. Aggression has several adaptive functions, from an evolutionary perspective. Aggression helps to disperse populations over a wide area, thereby ensuring maximum use of available natural resources. Aggression helps animals to successfully compete for limited resources in their environment and, consequently, can be beneficial to their individual survival and ability to reproduce. Male animals also fight for the ability to mate with females. Thus, aggression also helps ensure that only the strongest individuals will pass their genes on to the next generation. The existence of innate, relatively automatic, aggressive responses has been demonstrated for many species (e.g., Lorenz, 1966). For example, for the male Stickleback fish, a red object triggers attack 100% of the time (Timbergen, 1952). However, no parallel innate aggressive response has been demonstrated for humans (Hinde, 1970).

Sigmund Freud (1930) wrote, “The tendency to aggression is an innate, independent, instinctual disposition in man” (p. 77). In his early writings, Sigmund Freud proposed that all human behavior stems from a life or self-preservation instinct, which he called *eros*. Freud did not acknowledge the presence of an independent instinct to explain the darker side of human nature. He wrote: “I cannot bring myself to assume the existence of a special aggressive instinct alongside the familiar instincts of self-preservation and of sex, on an equal footing with them” (Freud, 1909/1961, p. 140). The atrocities of World War I changed his mind. By 1920, Freud had proposed the existence of an independent death or self-destruction instinct, which he called *thanatos*. The life instinct supposedly counteracts the death instinct and preserves life by diverting destructive urges outward toward others in the form of aggressive acts (Freud, 1933/1950).

### Frustration-Aggression Theory

In 1939, psychologists from Yale University published a seminal book titled *Frustration and Aggression* (Dollard, Doob, Miller, Mowrer, & Sears, 1939). In this book, the authors proposed that aggression results from frustration rather than from an aggressive instinct, as Freud had proposed. Frustration is an unpleasant emotion that arises when a person is being blocked from achieving a goal. The Yale scholars’ theory was summarized in two bold statements: (a) “The occurrence of aggressive behavior always presupposes the existence of frustration” (p. 1), and (b) “the existence of frustration always leads to some

form of aggression” (p. 1). In their view, frustration depended on an “expected” or “hoped for” goal being denied and was not simply absence of achieving a goal.

Although frustration-aggression theory seemed to explain a large amount of everyday occurrences of aggression, it soon became apparent to the authors that not every frustration led to observable aggression. Rather than discard the theory, Leonard Berkowitz (1989) revised it by proposing that all unpleasant events—instead of only frustration—deserve to be recognized as important causes of aggression. The idea is that unpleasant events (including frustrations) automatically produce a primitive fight-or-flight response. This fight-or-flight response is an adaptive stress-reducing response that occurs in humans and other animals (Cannon, 1915). Thus, anything that makes us feel bad automatically produces aggressive tendencies. Whether or not aggression occurs depends on how the unpleasant event is interpreted and on the presence of aggressive cues. For example, if a person has just seen a violent movie—and, consequently, has aggression on his or her mind—the person might respond to being pushed from behind while exiting the theater in an aggressive manner rather than by trying to flee.

### Learning Theories

The earliest learning theory explanations for individual differences in aggressiveness focused on operant and classical conditioning processes. *Operant conditioning theory* proposed that people are more likely to repeat behaviors that have been rewarded and are less likely to repeat behaviors that have been punished (e.g., Ferster & Skinner, 1957; Thorndike, 1901). *Classical conditioning theory* proposed that through repeated pairing of an unconditioned stimulus with a conditioned stimulus, the unconditioned stimulus eventually elicits a response similar to the one elicited by the conditioned stimulus (e.g., Pavlov, 1927). Dogs that heard a bell (conditioned stimulus) every time they received food (unconditioned stimulus) eventually salivated when they heard the bell alone (conditioned response). Research showed that children who are reinforced for behaving aggressively learn to behave aggressively (e.g., Eron, Walder, & Lefkowitz, 1971).

By the early 1960s, however, it became clear that operant and classical conditioning processes could not fully explain individual differences in aggression. Albert Bandura theorized that people learn to behave aggressively by observing and imitating others (e.g., Bandura, 1973, 1977; Bandura, Ross, & Ross, 1961, 1963). In several classic experiments, Bandura tested his *observational learning theory* (also called *social learning theory*) by showing that young children imitated specific aggressive acts they observed in aggressive models. Bandura also developed the concept of *vicarious learning* of aggression by showing that children were especially likely to imitate models who had been rewarded for behaving aggressively (Bandura, 1965; Bandura et al., 1963). Bandura argued that the imitation was the key to social learning. The child doesn’t just imitate whatever behaviors he or she observes. What is important is how the child interprets the observed behavior and how competent the child feels in carrying out the behavior (Bandura, 1986). These cognitions provide a basis for stability of behavior tendencies across a variety of situations. Watching one parent hit the other parent may not only increase a child’s likelihood of hitting but may also increase the child’s belief that hitting is okay when someone makes you angry.

More recent research helps us better understand observational learning processes. Human and primate young have an innate tendency to imitate what they observe (Meltzoff, 2005; Meltzoff & Moore, 1977). They imitate expressions in early infancy, and they imitate behaviors by the time they can walk. Thus, the hitting, grabbing, pushing behaviors that young children see around them or in the mass media are generally immediately mimicked unless the child has been taught not to mimic them (Bandura, 1977; Bandura et al., 1961, 1963). Furthermore, automatic imitation of expressions on others’ faces can lead to

the automatic activation of the emotion that the other was experiencing. For example, observing angry expressions can stimulate angry emotions in viewers (Prinz, 2005; Zajonc, Murphy, & Inglehart, 1989).

### Theories Based on Physiological Arousal

Many stimuli that increase aggression (e.g., provocation, heat, media violence) also increase physiological arousal levels (e.g., heart rate, blood pressure), suggesting that arousal may have a role in stimulating aggression. But why would arousal increase aggression? There are at least four possible reasons. First, high levels of arousal may be experienced as aversive (e.g., Mendelson, Thurston, & Kubzansky, 2008) and may therefore stimulate aggression in the same way as other aversive stimuli (Berkowitz, 1989). Second, arousal narrows our span of attention (Easterbrook, 1959). If aggressive cues are salient in the situation, then people will focus most of their attention on the aggressive cues, which will facilitate aggression. Third, arousal increases the dominant response, which is defined as the most common response in that situation (Zajonc, 1965). If people are inclined to behave aggressively, they will be even more inclined to behave aggressively when aroused. Fourth, arousal may be mislabeled as anger in situations involving provocation, thus producing anger-motivated aggressive behavior. This mislabeling of arousal forms the basis of excitation-transfer theory (Zillmann, 1979, 1988). Excitation-transfer theory assumes that physiological arousal, however it is produced, dissipates slowly. If two arousing events are separated by a short amount of time, some of the arousal caused by the first event may transfer to the second event. In other words, arousal from the first event may be misattributed to the second event. If the second event increases anger, then the additional arousal should make the person even angrier. Excitation-transfer theory also suggests that anger may be extended over long periods of time, if the person attributes his or her heightened arousal to anger and ruminates about it. Thus, even after the arousal has dissipated the person may remain ready to aggress for as long as the self-generated label of "anger" persists.

### Social-Cognitive, Information-Processing Models of Aggression

Two important cognitive information-processing models were proposed in the 1980s. One model focuses primarily on scripts (Huesmann, 1988, 1998; Huesmann & Eron, 1984). Scripts can be learned by direct experience or by observing others (e.g., parents, siblings, peers, mass media characters). In a play or movie, a script tells the actor what to say and do. In memory, a *script* also tells the person what to say and do. The person first searches his or her memory for a script to guide behavior in the current situation and then assumes a role in the retrieved script. For example, most people know what to do when they enter a restaurant because they have learned a restaurant script by observing how others behave in a restaurant (i.e., enter restaurant, go to table, look at menu, order food, eat food, pay for food, leave tip, exit restaurant; see Abelson, 1981). As another example, children can learn scripts for aggression by observing violence in the mass media.

What determines which of the many scripts in a person's memory will be retrieved on a given occasion? One factor involves the principle of encoding specificity. According to this principle, the recall of information depends in large part on the similarity of the recall situation to the situation in which encoding occurred (Tulving & Thomson, 1973). As a child develops, he or she may observe cases in which aggression is used to solve interpersonal conflicts. The observed information is then stored in memory, possibly to be retrieved later when the child is involved in a conflict situation. Whether the script is retrieved will depend partly on the similarity between cues present at the time of encoding and those present at the time of retrieval. If the cues are similar, the child may retrieve the script and use it as a guide for behavior.

The other model focuses primarily on attributions (Dodge, 1980, 1993; Dodge & Frame, 1982). *Attributions* are the explanations people give about why others behave the way they do. Aggressive people have a *hostile attribution bias*—they tend to perceive ambiguous actions by others as hostile, which can lead them to respond in hostile ways themselves (Orobrio de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). For example, if someone bumps into them, they might infer that the person did it intentionally to harm or annoy them and might therefore respond aggressively.

Although these two models differ in their details, both view aggression as the outcome of a social problem-solving process in which situational factors are evaluated, social scripts are retrieved or attributions are made, and these scripts or attributions are evaluated (often nonconsciously) until one is selected to guide behavior.

### Meta-Aggression Theories

Two important meta-theories have also been proposed to explain aggression—the  $I^3$  (I-cubed) model (Finkel & Hall, 2018) and the general aggression model (Anderson & Bushman, 2002). Meta-theories are broad theories that encompass other theories.

The three Is in the  $I^3$  model (Finkel & Hall, 2018) are instigation, impellance, and inhibition. *Instigation* encompasses immediate environmental stimuli (e.g., provocation) that normatively afford an aggressive response. *Impellance* encompasses situational or dispositional stimuli (e.g., trait aggressiveness) that influence how strongly the instigator produces an urge or proclivity to aggress. *Inhibition* encompasses situational or dispositional stimuli (e.g., alcohol intoxication) that influence how strongly the urge or proclivity is overridden rather than producing an aggressive behavior. An aggressive behavior is especially likely, and especially intense, to the extent that instigation and impellance are strong and inhibition is weak—called a *perfect storm*.

In the general aggression model (e.g., Anderson & Bushman, 2002; see Figure 8.1), certain person and situation *inputs* are risk factors for aggression. Person inputs include anything the person brings to the situation (e.g., gender, age, genetic predispositions, IQ, brain functions, hormones, neurotransmitters,

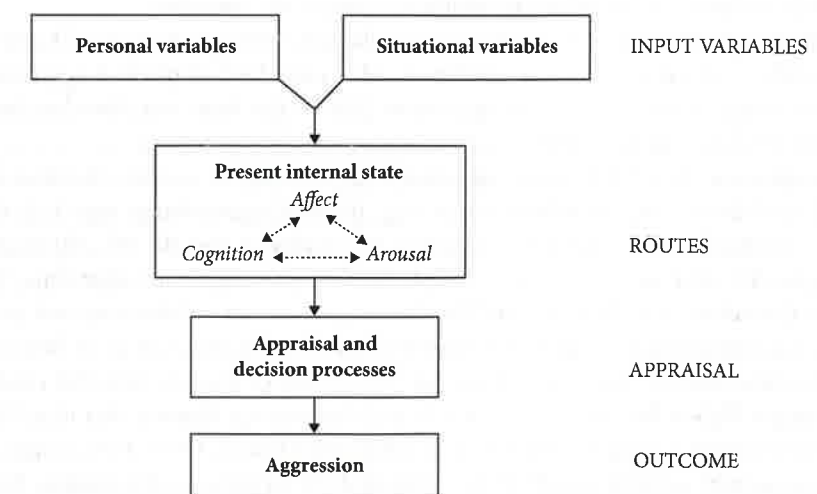


FIGURE 8.1. General aggression model. Adapted from "Human Aggression," by C. A. Anderson and B. J. Bushman, 2002, *Annual Review of Psychology*, 53, 27–51.



personality traits, attitudes, values, beliefs). Situation inputs include all external factors that can influence aggression (e.g., provocation, frustration, social rejection, hot temperatures, crowding, family influences, aggressive peers, alcohol intoxication, exposure to violent media, and availability of guns, external motives for aggression). These personal and situational factors influence the person's internal state, which includes affect, cognition, and arousal (e.g., skin conductance, heart rate, blood pressure). Thus, there are three possible routes to aggression—through angry feelings, aggressive thoughts, and physiological arousal. However, these internal states are not mutually exclusive or even independent, as indicated by the dashed lines with double-headed arrows shown in Figure 8.1. For example, someone who feels angry might also have aggressive thoughts and have elevated blood pressure. The internal states influence the decisions the person makes. These decisions influence whether the person will behave aggressively.

The general aggression model provides a meta-theoretical model for discussing the personal and risk factors related to aggressive behavior, as well as the underlying processes of internal states and hostile appraisals. I briefly discuss these risk factors and processes next.

### Personal Variables

Personal variables include all the characteristics that the person brings to the situation that can influence aggression. Due to space limitations, I cannot discuss all personal variables that can influence aggression, so I will briefly mention a few—gender, age, cognitive executive brain functions, the neurotransmitter serotonin, and the dark tetrad of personality (i.e., narcissism, psychopathy, Machiavellianism, and sadism).

#### Age

In all cultures, aggressive behavior appears very early in childhood (e.g., Caplan, Vespo, Pedersen, & Hay, 1991), although it is difficult to be certain about “intent” to harm. These findings cast doubt on learning theory as an explanation of aggressive behavior in young children. It is more likely that aggressive proclivities are inborn. Most children don't have to learn how to behave aggressively—it comes quite naturally. What children have to learn is how to inhibit their aggressive impulses.

In terms of age differences, physical aggression levels peak between the ages of 1 and 3. In daycare settings, about 25% of interactions among toddlers involve some kind of physical aggression (Tremblay, 2000). No other group resorts to physical aggression 25% of the time, not even hardened criminals. Fortunately, most toddler aggression isn't serious enough to qualify as violence.

Exact developmental trends in general aggression are difficult to measure because aggressiveness manifests itself in different ways at different ages (e.g., physical aggression at ages 1–3, fighting at age 8, telling lies about others at age 12, vandalism at age 16, murder at ages 20–24). Although most people become less aggressive after age 3, a subset of people become *more* aggressive over time. The most dangerous years for this subset of individuals (and for their targets) are late adolescence and early adulthood. This is because aggressive acts become more extreme (e.g., weapons are used more frequently), and the consequences become more severe (Cairns & Cairns, 1994). Official records show that on average violent criminal offending is highest between ages 17 and 34 and declines significantly after that (FBI, 2017).

Aggressiveness is almost as stable over time as intelligence (Olweus, 1979). For example, one study reported 22-year continuity correlations of .50 for males and .35 for females (Huesmann, Eron, Lefkowitz, & Walder, 1984). The more aggressive child grows up to be the more aggressive adult, whereas the less aggressive child grows up to be the less aggressive adult (Hartup, 2005). There are two types of people tend to

commit serious aggressive acts: (a) those for whom aggression is stable and persistent—called *life-course-persistent*—and (b) those for whom aggression is temporary and situational—called *adolescent-limited* (Moffitt, 1993). The results from longitudinal studies have found that aggressive behaviors are more serious in life-course-persistent individuals than in adolescent-limited individuals (e.g., Huesmann, Dubow, & Boxer, 2009; Moffitt, 2007).

### Gender

There are gender differences in aggression, but the main difference is in the form of aggression (Björkqvist, 2018). Physical aggression is greater for males than females, whereas indirect and relational aggression is greater for females than males. The most dramatic gender differences are in physically violent behavior in young adulthood, where men commit most of the violent crimes (FBI, 2017). There is no known society in which women commit most of the violent crimes (Steffensmeier & Allan, 1996).

However, it would be wrong to think that females are never physically aggressive. Gender differences in physical aggression shrink under conditions of provocation (Bettencourt & Miller, 1996). Females are especially likely to respond with aggression when provoked by other females (Collins, Quigley, & Leonard, 2007). When it comes to heterosexual domestic partners, women are slightly *more* likely than men to use physical aggression against their partners (Archer, 2000). However, men are more likely than women to inflict serious injuries and death on their partners.

### Cognitive Executive Brain Functions

Executive functions are the cognitive abilities that help us control our behavior, including aggressive behavior. The primary source of executive functioning appears to be the frontal lobes and, in particular, the prefrontal cortex, which is the part of the brain located just behind the forehead (Roberts, Robbins, & Weiskrantz, 1998). Generally speaking, frontal lobe function is negatively related to aggression and violence (Bartholow, 2018).

### Serotonin

Serotonin is a naturally occurring chemical in the brain that is known to influence aggression, particularly impulsive aggression. Serotonin is called a “feel good” neurotransmitter. If people don't have enough of it, they feel bad and may therefore behave more aggressively. Although serotonin can act in other parts of the body (e.g., the digestive system), in the brain serotonin is important in modulating a number of emotional and behavioral responses, including anger, mood, and aggression. Research has shown a consistent link between low levels of serotonin and reactive aggression, but not for proactive aggression (for a review, see Bartholow, 2018).

### Dark Personalities

Some scholars have challenged the notion that aggressiveness is a unitary trait and have proposed instead that it consists of four dark traits: narcissism, psychopathy, Machiavellianism, and sadism (Paulhus, Curtis, & Jones, 2018).

The term *narcissism* comes from the Greek myth about a handsome young man named Narcissus who fell in love with his own image reflected in the still water. Narcissus said, "I burn with love for me!" Narcissists have grandiose self-views, a selfish orientation, and a lack of empathy for others. Narcissists think they are special people who deserve special treatment. When they do not get the respect they think they are entitled to, they can lash out at others in an aggressive and violent manner. Psychopaths are callous and unemotional individuals who mainly focus on obtaining their own goals, regardless of whether they hurt others in the process. The term *Machiavellianism* comes from the Italian philosopher and writer Niccolò Machiavelli, who advocated using any means necessary to gain raw political power, including aggression and violence. Most people experience distress after hurting an innocent person, but for sadists it produces pleasure, excitement, and perhaps even sexual arousal. Although the four dark traits are theoretically distinct, they share common features (e.g., lack of empathy, callous manipulation of others). Although all four dark personalities are related to aggression and violence, the strongest relations appear to be with psychopathy (for a review, see Paulhus et al., 2018).

### Situational Variables

Situational variables include all the factors external to the person that can influence aggression. I cannot discuss all situational variables that can influence aggression, so I will briefly mention three—alcohol intoxication, violent media exposure, and the availability of guns. I previously discussed briefly the role of unpleasant external events (e.g., frustration, provocation, hot temperatures, social rejection) on aggression in the section on frustration-aggression theory. Unpleasant events are very strong predictors of aggression and violence (for a review, Groves & Anderson, 2018). Of course, family members (e.g., Labella & Masten, 2018) and peers (e.g., Bond & Bushman, 2017) can also have a significant influence on aggression and violence. However, I do not discuss these risk factors in this chapter because they are typically the domain of developmental psychologists rather than social psychologists.

#### Alcohol Intoxication

It is well-known that alcohol intoxication is associated with aggressive and violent behavior (for a review, see Parrott & Eckhardt, 2018). In fact, sometimes alcohol is deliberately used to promote aggression. For example, it has been standard practice for many centuries to issue soldiers some alcohol before they went into battle, both to reduce fear and to increase aggression (Keegan, 1993).

Several theories have been proposed to explain alcohol's aggression-enhancing effects, most of which emphasize effects of alcohol on disrupting cognitive processing. One explanation is that alcohol reduces the cognitive inhibitions against behaving aggressively (Graham, 1980). To use a car analogy, alcohol increases aggression by cutting the brake line rather than by stepping on the gas. Another explanation is that alcohol has a myopic (near-sighted) or narrowing effect on attention (Steele & Josephs, 1990), which causes people to focus attention on the most salient features of a situation and to ignore more subtle features. For example, after a few drinks, a bar patron might be especially likely to focus attention on a highly salient, apparent provocation (e.g., being pushed from behind) and to ignore peripheral cues that might inhibit an aggressive response (e.g., the push was accidental, the provocateur is much larger and stronger). A third explanation is that alcohol increases aggression by decreasing self-awareness (Hull, 1981). When people become self-aware, they focus attention on their internal standards. Most people have internal standards against behaving aggressively, but alcohol reduces people's ability to focus on these internal standards. A fourth

explanation is that alcohol disrupts executive functions (Giancola, 2000), which allow people to control their aggressive impulses. A fifth explanation is that alcohol increases aggression because people expect it to. In many cultures, drinking occasions are culturally agreed-on "time-out" periods when people are not held responsible for their actions (MacAndrew & Edgerton, 1969). People who behave aggressively while intoxicated can therefore "blame the bottle" for their actions. A sixth explanation is that alcohol decreases serotonin levels (Badawy, 2003). Recall that low serotonin levels are related to reactive aggression.

Does all of this mean that aggression is somehow contained in alcohol? No. Alcohol disinhibits rather than causes aggressive tendencies. Factors that normally increase aggression have a stronger effect on intoxicated people than on sober people (Bushman, 1997). Put another way, alcohol mainly seems to increase aggression in combination with other factors. If someone insults or attacks you, your response will be more aggressive if you are drunk than sober. When there is no provocation, however, the effect of alcohol on aggression may be negligible.

#### Violent Media Exposure

Public debate on violent media effects can become especially contentious in the wake of a shooting rampage, after it is revealed that the shooter frequently played violent video games (Bushman et al., 2016). However, it is impossible to make causal inferences about what caused a shooting rampage. Violent behavior is complex and is caused by multiple factors, often acting together. The rarer the violent behavior (e.g., from hitting, to shooting, to rampage shooting), the more complex the causality may be. Exposure to violent media is just one of many possible risk factors for violence. Exposure to violent media is correlated with violent criminal behavior (Bushman & Anderson, 2015), but correlation does not necessarily imply causation. One can, however, draw causal inferences about the link between exposure to violent media and aggressive behavior from the results of experimental studies. Hundreds of experiments have shown that exposure to violent media *causes* an increase in aggressive behavior (Bushman & Anderson, 2015). Longitudinal studies also are useful in establishing cause, because they help establish the direction of the relationship and often control for several possible confounding variables. Longitudinal studies have shown that violent media effects persist over time. For example, a 15-year longitudinal study involving 329 participants found that heavy viewers of violent TV shows in first and third grade were three times more likely to be convicted of criminal behavior by the time they were in their 20s (Huesmann, Moise, Podolski, & Eron, 2003). They were also more likely to abuse their spouses and assault other people. Exposure to violent media appears to increase aggression through all three routes to aggression—by increasing angry feelings, aggressive thoughts, and physiological arousal (e.g., Anderson et al., 2010). Exposure to violent media also increases hostile appraisals (Bushman, 2016). Some scholars have questioned how robust the meta-analytic results are for violent video game effects, due to possible publication bias (see Hilgard, Engelhardt & Rouder, 2017; for a response to Hilgard et al., see Kepes, Bushman, & Anderson, 2017).

#### Availability of Guns

Around the world, guns may be hazardous to your health. In the United States, gun violence has been described as a "public health crisis" (Bauchner et al., 2017). More Americans have died from gun violence than from all the wars combined since 1775 (Bailey, 2017). In 2015, more Americans died from guns than from motor vehicles (36,252 vs. 36,161 deaths, respectively; Centers for Disease Control, 2017). Contrary to popular opinion, guns do not make individuals, their families, or their homes safer. For every person killed by a gun in self-defense in the United States each year, there are 34 homicides, 78 suicides, and 2



accidental gun deaths (Ingraham, 2015). Ample research from around the world suggests the availability of guns increases the risk of lethal violence (Cukier & Eagen, 2018).

Indeed, research shows that just seeing a gun can also increase aggression. Leonard Berkowitz (1968) noted, "Guns not only permit violence, they can stimulate it as well. The finger pulls the trigger, but the trigger may also be pulling the finger" (p. 22). This finding, called the "weapons effect," was first demonstrated by Berkowitz and LePage in 1967. Since then, the weapons effect has been replicated many times, both inside and outside the lab (for a recent meta-analytic review, see Benjamin, Kepes, & Bushman, 2018).

### Present Internal State

The general aggression model posits three routes to aggression—through aggressive thoughts, angry feelings, and physiological arousal. However, these routes are not mutually exclusive or even independent, as indicated by the dashed lines with double-headed arrows shown in Figure 8.1. For example, someone who has aggressive ideas might also feel angry and have elevated blood pressure. Someone who has aggressive thoughts, who feels angry inside, and who is physiologically aroused should be more likely to lash out at others aggressively than someone who has no aggressive thoughts, who does not feel angry, and who is not physiologically aroused. I considered physiological arousal previously (in the section on theories based on physiological arousal); I consider aggressive thoughts and angry feelings here.

The link between cognition and behavior follows from social priming theory (e.g., Strack & Schwarz, 2016). Semantic memory can be represented as an associative network consisting of nodes and links (Collins & Loftus, 1975). The nodes represent concepts, and the links represent associations among concepts. When a concept is primed or activated in memory, other related concepts become activated as well. Once a concept has been activated, it is more accessible in memory. The more accessible a concept, the more likely it is to be used to process and interpret social information (e.g., Bruner, 1957).

Anger is the primary emotional response linked to aggression. That is why aggressive people are sometimes ordered by courts to take an anger-management course. Recall that reactive aggression is motivated by anger. Why is anger likely to increase aggression? One possible reason is that angry people aggress in the hope that doing so will help them to feel better. Research has consistently shown that people who feel bad often try to remedy or repair their moods (Morris & Reilly, 1987). Because many people believe that venting is a healthy way to reduce anger and aggression (see Bushman, Baumeister, & Phillips, 2001), they might vent by lashing out at others to improve their mood. One series of studies replicated the standard finding that anger increases aggression but also found an interesting (and revealing) exception: When participants believed that their angry mood would not change for the next hour no matter what they did (ostensibly because of side effects of a pill they had taken), anger did not lead to aggression (Bushman et al., 2001). The implication of this finding is that anger does not *directly* or *inevitably* cause aggression. Rather, angry people attack others because they believe that lashing out will help get rid of their anger and enable them to feel better.

### Appraisal and Decision Processes

In the general aggression model, internal states can influence appraisal and decision processes. These are the explanations people give for their own and others' behaviors, which can have a strong influence on their behavior, including aggressive behavior. When others behave in an ambiguous manner, do people

give them the benefit of the doubt, or do they assume others are out to get them? People are more likely to behave aggressively when they perceive ambiguous behaviors from others as stemming from hostile intentions than when they perceive the same behaviors as coming from benign intentions.

Research has shown that hostile biases can influence appraisal and decision processes. Some examples of hostile biases include the hostile attribution bias, the hostile expectation bias, and the hostile perception bias (Dill, Anderson, Anderson, & Deuser, 1997). The *hostile attribution bias* was described previously. The *hostile expectation bias* is the tendency to expect others to react to potential conflicts with aggression. For example, if you bump into another person, a hostile expectation would be that the person will assume that you did it on purpose and will attack you in return. The *hostile perception bias* is the tendency to perceive social interactions in general as being aggressive. For example, if you see two people having a conversation, a hostile perception would be that they are arguing. All of these biases are linked to aggression. The world would be a more peaceful place if more people could give each other the benefit of the doubt. Fortunately, hostile biases can be changed. In one study (Penton-Voak, Thomas, Gage, McMurrin, McDonald, & Munafò, 2013), for example, participants were teens considered high risk for committing a crime (70% already had a criminal record). Teens saw 15 faces on a continuum that ranged from clearly happy to clearly angry, with several ambiguous faces in between. First, they indicated the point in the continuum when the faces changed from happy to angry. Next, teens were randomly assigned to treatment or control groups. The treatment consisted of telling the teens that two of the faces they thought were angry were in fact happy. They were told this each day for four days, just to make sure they got it. To measure the effect of the treatment, staff members recorded incidents of aggressive behavior the week prior to the experiment and two weeks after the experiment. The results showed that teens in the treatment group were significantly less aggressive than those in the control group.

### What Can be Done to Reduce Aggression?

Even though one can kill a lot more people with modern weapons (e.g., bombs, missiles, tanks) than with ancient weapons (e.g., sticks, stones, spears), quantitative studies have shown that violence levels around the world are actually decreasing over time—by millennia, century, and even decade (Pinker, 2011). A primary factor in curbing aggression and violence around the world is culture (Baumeister, 2005). People don't have to learn how to behave aggressively—it comes quite naturally. What people have to learn is how to inhibit and control their aggressive tendencies.

The fact that there is no single cause for aggression makes it difficult to design effective interventions. An intervention that works for one person may not work for another person. There are two important general points to emphasize about interventions (Bushman & Huesmann, 2010). First, successful interventions target as many causes of aggression as possible and attempt to tackle them collectively. Interventions that are narrowly focused at removing a single cause of aggression, however well conducted, are likely to fail. Second, aggressive behavior problems are best treated in childhood, when they are still malleable. It is much more difficult to alter aggressive behaviors when they are part of an adult personality than when they are still in development. Thus, interventions should target aggressive children before they grow up to become aggressive adults. In this section, I discuss some interventions that have been used to reduce aggression. Before I discuss the effective interventions, I first debunk two ineffective ones—catharsis and punishment.

### Ineffective Methods

#### Catharsis

The term *catharsis* dates back to Aristotle, who taught in *Poetics* that viewing tragic plays gave people emotional release from negative emotions such as pity and fear. In Greek drama, the heroes didn't just grow old and die of natural causes—they were often murdered. In modern times, Sigmund Freud revived the ancient concept of catharsis. Freud believed that if people repressed their negative emotions, psychological symptoms such as hysteria and neuroses could surface (e.g., Breuer & Freud, 1893–1895). Freud's ideas are the foundation of the hydraulic model of anger, which suggests that frustrations lead to anger. Anger, in turn, builds up inside an individual like hydraulic pressure inside a closed circuit until it is vented. If the anger is not vented, the build-up of anger will presumably cause the individual to explode in an aggressive rage. People can supposedly vent their anger by engaging in aggressive activities (e.g., yelling, screaming, swearing, punching a pillow, throwing objects, tearing phone books, kicking trash cans, slamming doors), or even by watching others engage in aggressive activities in the real world or in the virtual world (e.g., watching violent TV programs or films, playing violent video games).

Almost as soon as researchers started testing catharsis theory, it ran into trouble. In one early experiment (Hornberger, 1959), for example, participants who had been insulted by an actor either pounded nails with a hammer for 10 minutes or did nothing. Next, all participants had a chance to criticize the actor who had insulted them. According to catharsis theory, the act of pounding nails should reduce anger and subsequent aggression. However, the opposite was true: Participants who pounded nails were *more* hostile toward the actor afterward than were the participants who did nothing. Subsequent research has found similar results (e.g., Geen & Quanty, 1977). Other research has shown that venting anger by pounding on a punching bag doesn't reduce aggression even among people who believe in the value of venting and even among people who report feeling better after venting (Bushman, Baumeister, & Stack, 1999). Indeed, it increases aggression, even against innocent bystanders (Bushman et al., 1999).

One variation of venting anger is physical exercise. Although physical exercise is good for your heart, research has shown that physical exercise does not reduce aggression (Bushman, 2002). Angry people are physiologically aroused, and physical exercise just keeps the arousal level high. To reduce anger, people should try to reduce their arousal level rather than increase it by exercising.

#### Punishment

Most cultures assume that punishment is an effective way to reduce aggression. *Punishment* is defined as inflicting pain (*positive punishment*) or removing pleasure (*negative punishment*) for a misdeed to reduce the likelihood that the punished individual will repeat the misdeed (or related misdeeds) in the future. Parents use it, organizations use it, and governments use it. But does it work? Today, aggression researchers think punishment does more harm than good (Grogan-Kaylor, Ma, & Graham-Bermann, 2018). This is because punishment only temporarily suppresses aggression, and it has several undesirable side effects (Baron & Richardson, 1994; Berkowitz, 1993; Eron et al., 1971). Punishment models the behavior it seeks to prevent. For example, suppose a father with two sons sees the older one beating up the younger one. The father starts spanking the older boy while proclaiming, "I'll teach you not to hit your little brother!" The father is teaching the older boy something—that it is okay to behave aggressively as long as you are an authority figure. In addition, because punishment is aversive, it can classically condition children to avoid their parents and, in the short run, can instigate retaliatory aggression. Longitudinal studies have shown that children who are physically punished by their parents at home are more aggressive outside the home, such as at school (e.g., Lefkowitz, Huesmann, & Eron, 1978).

### Developing Nonaggressive Ways of Behaving

Most aggression treatment programs can be divided into one of two broad categories, depending upon whether aggression is viewed as proactive or reactive (Berkowitz, 1993, pp. 358–370). Recall that proactive aggression is cold-blooded and is a means to some other end, whereas reactive aggression is hot-blooded and is an end in itself.

#### Approaches to Reducing Proactive Aggression

People often resort to aggression because they think it is the easiest and fastest way to achieve their goals. Psychologists who view aggression as proactive behavior use *behavior modification* learning principles to teach aggressive people to use nonaggressive behaviors to achieve their goals, and it works (e.g., Patterson, Reid, Jones, & Conger, 1975). A major problem with punishment is that it does not teach the aggressor new, nonaggressive forms of behavior. One way to get rid of an undesirable behavior is to replace it with a desirable behavior (called *differential reinforcement of alternative behavior*). The idea is that by reinforcing nonaggressive behavior, aggressive behavior should decrease. Other effective programs include social skills training, where people are taught how to better read verbal and nonverbal behaviors in social interactions (e.g., Pepler, King, Craig, Byrd, & Bream, 1995). Exposure to prosocial role models also reduces aggression and increases helping (e.g., Spivey & Prentice-Dunn, 1990), even if the models are media characters (e.g., Greitemeyer & Mügge, 2014; Mares & Woodward, 2005).

#### Approaches to Reducing Reactive Aggression

Other approaches to reducing aggression focus on lessening emotional reactivity using relaxation and cognitive-behavioral techniques (for a meta-analytic review, see Lee & DiGuiseppe, 2018). Most relaxation-based techniques involve deep breathing, visualizing peaceful images, or tightening and loosening muscle groups in succession. People practice relaxing after imaging or experiencing a provocative event. In this way, they learn to calm down after they have been provoked. Cognitive-based techniques focus on how a potentially provocative event is interpreted and how to respond to such events. For example, people rehearse statements in their mind such as "Stay calm. Just continue to relax" and "You don't need to prove yourself." It is especially effective to combine relaxation and cognitive techniques (e.g., Novaco, 1975). Another effective technique involves taking a more distant perspective, like a "fly on the wall" (Mischkowski, Kross, & Bushman, 2012). In people who are characteristically angry, avoidance cues such as leaning backward (instead of forward) or pushing away (instead of pulling toward) can reduce anger and aggression (Veenstra, Bushman, & Koole, 2018).

### Future Research

I don't have a crystal ball, and predictions of the future can be hazardous, to say the least. Indeed, in Dante's *Inferno*, futurists and fortune-tellers are consigned to the eighth circle of hell. Despite Dante's warning, I will make four speculations about promising areas for future research on aggression. The first is social neuroscience, which is a hot topic today (see Chapter 15) and will probably become even hotter in the future. The link between brain activity and human aggression is a promising area of current and future research (e.g., Bartholow, 2018). The second area is the impact of guns, in both the virtual world and the real world. The third area is the impact of climate. When people think about the consequences of global warming, they generally focus on such things as weather, crops, islands sinking, glaciers melting, and polar



bears losing their habitat. People rarely think about how global warming influences aggression and violence levels, but it does (Anderson, Bushman, & Groom 1997). New theoretical models have focused on explaining the link between climate and aggression and violence levels, such as the climate, aggression, and self-control in humans model (CLASH; Van Lange, Rinderu, & Bushman, 2017). CLASH might also shed light on intergroup conflict (Van Lange, Rinderu, & Bushman, in press). The fourth area is self-control. Aggression often starts when self-control stops (e.g., DeWall, Baumeister, Stillman, & Gailliot, 2007). Hopefully social psychologists will be at the forefront of conducting research on these and other important topics, which ultimately have the potential to make a society a more peaceful place to live. If anything can correct the "human failing" of aggression that Stephen Hawking bemoaned, it is scientific research.

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